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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,827	03/25/2004	Abaneshwar Prasad	100217	6730

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EXAMINER

SCRUGGS, ROBERT J

ART UNIT	PAPER NUMBER
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3723

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/808,827

Applicant(s)

PRASAD, ABANESHWAR

Examiner

Robert Scruggs

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7-23 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to amendment received on June 2, 2006. Claims 5 and 6 have been canceled therefore claims 1-4 and 70-23 will be fully examined.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 7-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Lehman et al. (2003/0190864). Lehman et al. taken as a whole discloses a chemical mechanical polishing pad comprising, a polishing layer (Figure 1 and 1d) (188) including endpoint detection port (Figure 1a) (182), a hydrophobic region (194) and a hydrophilic region (184), said polishing layer formed from common abrasive particles, such as, alumina, ceria, silica etc. and a polishing surface having grooves formed thereon (Paragraph 83), said endpoint detection port formed from optically transmissive material (Paragraphs 89, 26) which can be attached with or without the use of an adhesive, said endpoint detection port including an aperture, wherein said optically transmissive material inherently has a light transmission of at least 10% at one or more wavelengths ranging from 190 nm to about 3500 nm depending upon the light source capability, the sample being illuminated and the property being determined (Paragraph 86), said hydrophobic region being formed from a group consisting of polybutadienes, polyethylenes, polystyrenes and combinations thereof (Paragraph 89), said hydrophobic

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region being located adjacent to said endpoint detection port which completely surrounds the endpoint detection port and can inherently be formed to have a surface energy of 34 mN/m or less depending upon the application and the desire needed by a user, said hydrophilic region being formed from polyurethane and can inherently be formed to have a surface energy of 34 mN/m or more depending upon the application and the desire needed by a user (Paragraph 83) and wherein said polishing pad can include a subpad layer (Paragraph 83) having an optical endpoint detection port formed from optically transmissive material, including an aperture and being aligned with the optical endpoint detection port of the polishing layer (Paragraphs 30-32).

4. Regarding the method claims 22 and 23, Lehman et al. previously mentioned above inherently disclose a method of polishing a substrate comprising the following steps;

- a. providing a work piece to be polished,
- b. contacting the work piece with a chemical mechanical polishing system,
- c. abrading at least a portion of the surface of the work piece with the polishing system to polish the work piece, and
- d. detecting *in situ* a polishing endpoint.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lehman et al. (2003/0190864) in view of Nagahara et al. (6168508). Lehman et al. discloses the claimed invention previously mentioned above, but lacks, a plurality hydrophobic regions formed about the perimeter of the polishing layer and a plurality hydrophilic regions in the form of alternating concentric shapes completely surrounding an endpoint detection port. However, Nagahara et al. teaches of a polishing pad having a plurality of alternating concentric regions (Figures 1a, 2b and 3b) including a hydrophobic region formed about the perimeter of the polishing layer and another hydrophilic region. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the shapes of the hydrophobic and hydrophilic regions, of Lehman et al. with a polishing pad having a plurality of alternating concentric regions including a hydrophobic region formed about the perimeter of the polishing layer and a hydrophilic region, in view of Nagahara et al. in order to eliminate the effects of dishing during the polishing process.

Response to Arguments

7. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wiswesser (6994607) and Roberts (6984163) both disclose polishing pads having windows used as a *in situ* endpoint detection system for determining when a substrate has completely undergone a uniform polishing process.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Scruggs whose telephone number is 571-272-8682. The examiner can normally be reached on Monday-Friday, 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571-272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RS



DAVID B. THOMAS
PRIMARY EXAMINER